

**CERTIFICATE OF MAILING BY "EXPRESS MAIL" (37 CFR 1.10)**

Applicant(s): Yu SUI et al.

Docket No.

2004US301

Serial No.

10/808,884

Filing Date

March 25, 2004

Examiner

DUDA, Kathleen

Group Art Unit ..

1756

Invention: POSITIVE-WORKING PHOTOIMAGEABLE BOTTOM ANTIREFLECTIVE COATING

I hereby certify that this Information Disclosure Citation (Form 1449) - 2 Pages

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20231-0001 on January 23, 2007

(Date)

MARIA T. SANCHEZ

(Typed or Printed Name of Person Mailing Correspondence)

(Signature of Person Mailing Correspondence)

EV 689560274 US

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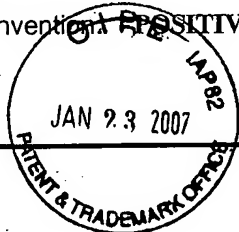
Examiner

DUDA, Kathleen

Group Art Unit

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Invention: POSITIVE-WORKING PHOTOIMAGEABLE BOTTOM ANTIREFLECTIVE COATING

**Transmittal of Information Disclosure Statement  
(2 original pages and 2 copy pages) - 4 Pages**

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**TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT**  
(Under 37 CFR 1.97(b) or 1.97(c))

Docket No.  
2004US301

In Re Application Of: **Yu SUI et al.**

Serial No.  
10/808,884

Filing Date  
March 25, 2004

Examiner  
DUDA, Kathleen

Group Art Unit  
1756

Title: **POSITIVE-WORKING PHOTOIMAGEABLE BOTTOM ANTIREFLECTIVE COATING**



Address to:  
Assistant Commissioner for Patents  
Washington, D.C. 20231

**37 CFR 1.97(b)**

1. ☐ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application; within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; or before the mailing date of a first Office Action on the merits, whichever event occurs last.

**37 CFR 1.97(c)**

2. ☒ The Information Disclosure Statement submitted herewith is being filed after three months of the filing of a national application, or the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; or after the mailing date of a first Office Action on the merits, whichever occurred last but before the mailing date of either:

1. a Final Action under 37 CFR 1.113, or
2. a Notice of Allowance under 37 CFR 1.311,

whichever occurs first.

Also submitted herewith is:

- ☐ a certification as specified in 37 CFR 1.97(e);

**OR**

- ☒ the fee set forth in 37 CFR 1.17(p) for submission of an Information Disclosure Statement under 37 CFR 1.97(c).

**TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT**  
(Under 37 CFR 1.97(b) or 1.97(c))

Docket No.  
2004US301

In Re Application Of: Yu SUI et al.

Serial No.  
10/808,884

Filing Date  
March 25, 2004

Examiner  
DUDA, Kathleen

Group Art Unit  
1756

Title: **POSITIVE-WORKING PHOTOIMAGEABLE BOTTOM ANTIREFLECTIVE COATING**

**Payment of Fee**

(Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))

- ☐ A check in the amount of \_\_\_\_\_ is attached.
- ☒ The Assistant Commissioner is hereby authorized to charge and credit Deposit Account No. 50-3309 as described below. A duplicate copy of this sheet is enclosed.
- ☒ Charge the amount of \$180.00
- ☒ Credit any overpayment.
- ☒ Charge any additional fee required.

**Certificate of Transmission by Facsimile\***

I certify that this document and authorization to charge deposit account is being facsimile transmitted to the United States Patent and Trademark Office (Fax. No. \_\_\_\_\_)

\_\_\_\_\_ on \_\_\_\_\_  
(Date)

Signature

Typed or Printed Name of Person Signing Certificate

**Certificate of Mailing by First Class Mail**

I certify that this document and fee is being deposited on \_\_\_\_\_ with the U.S. Postal Service as first class mail under 37 C.F.R. 1.8 and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Signature of Person Mailing Correspondence

Typed or Printed Name of Person Mailing Correspondence

\*This certificate may only be used if paying by deposit account.



Signature

Dated: January 23, 2007

SANGYA JAIN  
(Reg. No. 38,504)  
AZ ELECTRONIC MATERIALS USA CORP.  
70 MEISTER AVENUE  
SOMERVILLE, NJ 08876

Customer No. 26,289

CC:



PATENT APPLICATION

**CERTIFICATE OF MAILING/FACSIMILE TRANSMISSION (37 CFR 1.8)**

I hereby certify that this paper (along with any paper referred to as being transmitted therewith) is being deposited with the United States Postal Service in an envelope addressed to Commissioner for Patents, P.O. Box. 1450, Alexandria, Virginia 22313-1450 on the date shown below as EXPRESS MAIL POST OFFICE TO ADDRESSEE, MAILING LABEL NO. EV 689560274 US.

Maria T. Sanchez

(Print Name)

Date: January 23, 2007

Maria T. Sanchez  
(Signature)

Docket No. 2004US301

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application

Yu SUI et al.

Serial No.: 10/808,884

Art Unit: 1756

Filed: March 25, 2004

Examiner: BARRECA, Nicole M.

For: POSITIVE-WORKING PHOTOIMAGEABLE BOTTOM ANTIREFLECTIVE  
COATING

**INFORMATION DISCLOSURE STATEMENT AFTER THE FIRST OFFICE ACTION ON  
THE MERITS, BUT BEFORE A FINAL OFFICE ACTION OR A NOTICE OF  
ALLOWANCE (37 CFR 1.97 (c))**

January 23, 2007

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

EXPRESS MAIL MAILING LABEL NO. EV 689560274 US

01/25/2007 WAFW1 00000031 503309 10808884  
03 FC:1806 180.00 DA

Serial No.: 10/808,884

Filed: March 25, 2004

Dear Sir:

In accordance with the duty of disclosure provisions of 37 CFR §1.56, there is hereby provided certain information which the Examiner may consider material to the examination of the subject U.S. patent application. It is requested that the Examiner make this information of record if it is deemed material to the examination of the subject application.

1. Enclosures accompanying this Information Disclosure Statement are:

1a. ☒ Form PTO-1449.

JP 6-295064 A

English Language Abstract of JP 6-295064 A

Machine Language English Translation from JPO of JP 6-295064 A

Houlihan et al., "Chemically Amplified Resists: The Chemistry and Lithographic Characteristics of Nitrobenzyl Benzenesulfonate Derivatives", Journal of Photopolymer Science and Technology, Vol. 1, No. 3, pp. 259 – pp. 273 (1990)

Lee et al., "Performance of vinyl ether cross-linkers on resist for 193 nm lithography", SPIE, Vol. 4690, pp. 541 – 548 (2002)

Moon et al., "Three-component photoresists based on thermal crosslinking and acidolytic cleavage", Polymer 41, pp. 4013 – pp. 4019 (2000)

Nakano et al., "Positive-Type Photopolyimide Based on Vinyl Ether Crosslinking and De-Crosslinking", Journal of Photopolymer Science and Technology Vol. 13, No. 5, pp. 715 – pp. 718 (2000)

Noppakunkilograt et al., "Visible Light-Sensitive Positive-Working Photopolymer Based on Poly(*p*-hydroxystyrene) and Vinyl Ether Crosslinker", Journal of Photopolymer Science and Technology Vol. 13, No. 5, pp. 719 – pp. 722 (2000)

Schacht et al., "Acid Labile Cross-Linked Units: A Concept for Improved Positive Deep-UV Photoresists", American Chemical Society, pp. 78 – pp. 94 (1998)

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White et al., "Synthesis and characterization of photodefinable polycarbonates for use as sacrificial materials in the fabrication of microfluidic devices", SPIE Vol. 4690, pp. 242 – pp. 253 (2002)

Yamada et al., "The design and study of aqueous-processable positive tone photoresists", SPIE Vol. 3999, pp.569 – pp. 578 (2000)

Yamada et al., "Positive and Negative Tone Water Processable Photoresists: A Progress Report", SPIE Vol. 3333, pp.245 – pp. 253 (2000)

Yamaoka et al., "Reaction of vinyl ethers and application of photoreactive process", Trends in Photochemistry & Photobiology Vol, 7, pp. 47 – pp. 70 (2001)

Leonard V. Interrante, Chemistry of Materials, Vol. 6, No. 10 (1994)

- 1b. ☒ Copies of Information Disclosure Statement citations with the exception that copies of US Patents and US Patent Application Publications are not enclosed as the present application was filed after June 30, 2003 and the Patent Office has waived the requirement to enclose such documents under 37 C.F.R. § 1.98(a)(2)(i) pursuant to the Official Gazette announcement dated 05 August 2003. (If box not checked, see item 8a. below).
- 1c. ☐ An English language copy of search report(s) from a counterpart foreign application or a PCT International Search Report - attached as annex to PCT/ISA/206 (If box checked, see item 8a. below).
- 1d. ☐ English language abstract (complete or relevant portion(s)) or English language equivalent attached to each non-English language publication (see item 9c or 9e).
- 1e. ☐ Explanations of Relevancy of References (ATTACHMENT 1(d), hereto) for providing a concise explanation of each non-English publication.
2. ☐ This Information Disclosure Statement is filed under 37 CFR §1.97(b) before the latter of three months after the U.S. patent application filing date or the first Office Action on the merits. Accordingly, no fee or §1.97(e) Statement is required.

3. ☒ This Information Disclosure Statement is filed under 37 CFR §1.97(c) after the first Office Action on the merits, but before a Final Office Action or a Notice of Allowance.
- 3a. ☐ The §1.97(e) Statement in Item 5 below is applicable. Accordingly, no fee is required.
- 3b. ☒ The \$180.00 fee set forth in 37 CFR §1.17(p) in accordance with 37 CFR §1.97(c) is to be charged to Deposit Account No. 50-3309.
4. ☐ This Information Disclosure Statement is filed under 37 CFR §1.97(d) after the Final Office Action or the Notice of Allowance, but before payment of the Issue Fee.
- ☐ The §1.97(e) Statement (Item 5 below) is applicable.  
A Petition to the Commissioner is hereby made under 37 CFR §1.97(d) to request consideration of this Information Disclosure Statement. The \$\_\_\_\_\_ fee set forth in 37 CFR §1.17(i) is to be charged to Deposit Account No. 50-3309.
5. ☐ Statement Under §1.97(e) (*applicable if Item 3a or Item 4 is checked*)
- 5a. ☐ In accordance with 37 CFR §1.97(e)(1), it is stated that each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.
- 5b. ☐ In accordance with 37 CFR §1.97(e)(2), it is stated that no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known by any individual designated in §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.
6. ☐ This is a continuation/divisional/continuation-in-part application under 37 CFR §1.53(b). (*Check appropriate Items 6a and/or 6b and/or 6c*).
- 6a. ☐ Copies of the publications listed on Form PTO-1449 from prior Application Serial No., filed on, of which this application claims priority under 35 USC §120 have been omitted pursuant to 37 CFR §1.98(d) except those listed in 6b. below.



Serial No.: 10/808,884  
Filed: March 25, 2004

- 6b. ☐ Copies of the following publications listed on Form PTO-1449 which were not previously cited in prior Application Serial No. \_\_\_\_\_, filed on \_\_\_\_\_, of which this application claims priority under 35 USC §120, are provided herewith:
- 6c. ☐ Copies of the publications listed in Item 1c. above are listed on Form PTO-1449 but are not included as they were .
7. ☐ This is a continuation/divisional application under 37 CFR §1.53(d). *(Check either Item 7a or 7b.)*
- 7a. ☐ The Issue Fee has not been paid.
- 7b. ☐ A Petition to Withdraw from Issue under 37 CFR §1.313(b)(5) has been granted. A continuation application under 37 CFR §1.53(d) after payment of the Issue Fee is proper in accordance with 37 CFR §1.53(d)(1)(ii).
8. ☐ This is a Supplemental Information Disclosure Statement. *(Check either Item 8a or 8b.)*
- 8a. ☐ This Supplemental Information Disclosure Statement under 37 CFR §1.97(f) supplements the Information Disclosure Statement filed on .
- 8b. ☐ This Supplemental Information Disclosure Statement is timely filed within one (1) month of the Notice under 37 CFR §1.97(i), mailed . (MPEP 609, Form ¶ 6.51, July 1997.)
9. ☐ In accordance with 37 CFR §1.98, a concise explanation of what is presently understood to be the relevance of each non-English language publication is:
- (Check appropriate Items 9a, 9b, 9c and/or 9d)*
- 9a. ☐ satisfied because all non-English language publications were cited on the enclosed English language copy of the PCT International Search Report or the search report from a counterpart foreign application indicating the degree of relevance found by the foreign office. (See U.S. Patent and Trademark Office's authorization in the Federal Register, Vol. 57, No. 12, January 17, 1992, at page 2031 (Reply to Comment 68)).
- 9b. ☐ set forth in the application.
- 9c. ☐ satisfied because an English language equivalent is attached to each non-English language publication as follows:
- 9d. ☐ enclosed as Attachment 1(d), hereto.
- 9e. ☐ attached in abstracts in the English language as follows:

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Serial No.: 10/808,884

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10. ☒ No admission is made that the information cited in this Statement is, or is considered to be, material to patentability nor a representation that a search has been made (other than search report(s) from a counterpart foreign application or a PCT International Search Report, if submitted herewith). 37 CFR §§1.97(g) and (h).
11. ☒ The Commissioner is authorized to credit any overpayment or charge any additional fee required under 37 CFR §1.17 for this Information Disclosure Statement and/or Petition to Deposit Account No. 50-3309.

Respectfully submitted,



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Attorney for Applicant(s)  
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Somerville, New Jersey 08876  
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Customer No. 26,289

EXPRESS MAIL MAILING LABEL NO. EV 689560274 US

# INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

ATTY DOCKET NO.  
2004US301

SERIAL NO.  
10/808,884

Yu SUI et al.

FILING  
March 25, 2004

GROUP  
1756

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	4,845,265	7/4/1989	Lapin et al.			
	5,939,235	8/17/1999	Kondo et al.			
	5,972,560	10/26/1999	Kaneko et al			
	6,124,077	9/26/2000	Imai et al.			
	6,187,509 B1	2/13/2001	Imai et al.			
	6,846,612 B2	1/25/2005	Deshpande			
	US 2002/0045130 A1	4/18/2002	Nitta et al.			
	US 2003/0162120 A1	8/28/2003	Yoon et al.			

## FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
	JP 6-295064 A	10/21/1994	JAPAN			✓	

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	English Language Abstract of JP 6-295064 A.
	Houlihan et al., "Chemically Amplified Resists: The Chemistry and Lithographic Characteristics of Nitrobenzyl Benzenesulfonate Derivatives", Journal of Photopolymer Science and Technology, Vol. 1, No. 3, pp. 259 - pp. 273 (1990)

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

**INFORMATION DISCLOSURE CITATION***(Use several sheets if necessary)*

Docket Number (Optional)

**2004US301**

Application Number

Applicant(s)

Filing Date

Group Art Unit

\*EXAMINER  
INITIAL**OTHER DOCUMENTS** *(Including Author, Title, Date, Pertinent Pages, Etc.)*

Lee et al., "Performance of vinyl ether cross-linkers on resist for 193 nm lithography",  
SPIE, Vol. 4690, pp. 541 - 548 (2002)

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20231-0001 on January 23, 2007*(Date)*MARIA T. SANCHEZ*(Typed or Printed Name of Person Mailing Correspondence)*  
*(Signature of Person Mailing Correspondence)*EV 689560274 US*("Express Mail" Mailing Label Number)***Note: Each paper must have its own certificate of mailing.**